Remarks

Claims 1-25 are pending, and claims 1-25 stand rejected. Claims 1-25 are cancelled without prejudice by this Response. Claims 26-41 are added by this Response and do not constitute new matter. The Applicants respectfully traverse the rejection and request allowance of claims 26-41.

New Claims

The Applicants have added claims 26-41. Support for these new claims can be found in the application as filed on page 6, line 12 to page 8 line 23.

Claim Rejections

The Examiner rejected claims 1-3, 5-6, 8, 10-11, 13-14, and 16 under 35 U.S.C. § 102 as anticipated by U.S. Patent number 5,856,980 (Doyle), rejected claims 4, 9, 12, 17-22, and 24-25 under 35 U.S.C. § 103 in view of Doyle and U.S. Patent Publication 2003/0206578 (Betts), rejected claims 7 and 15 under 35 U.S.C. § 103 in view of Doyle and U.S. Patent 6,198,779 (Taubenheim), and rejected claim 23 under 35 U.S.C. § 103 in view of Doyle, Betts, and Taubenheim. The Applicants cancelled claims 1-25, so these rejections are moot. The Applicants will distinguish new claims 26-41 for the benefit of the Examiner.

Independent claim 26 describes a method of encoding digital data on an analog signal cycle. The digital data is correlated to two amplitude values, and these two amplitude values are used to generate the analog signal cycle. The digital data is subsequently decoded by detecting the max and min amplitudes of the analog signal cycle, and correlating the max and min amplitudes to digital data. Doyle does not teach this type of encoding and decoding. Doyle describes one encoding scheme called 4B-1H pulse amplitude modulation (PAM). With the 4B-1H PAM scheme, four bits of data are encoded onto a max amplitude of a pulse. The 4B-1H PAM scheme is different than the encoding scheme in claim 26 in that the 4B-1H PAM scheme uses a single amplitude value to correlate with four bits, while the method of claim 26 uses two amplitude values. It would be difficult, if not impossible, to use multiple amplitude values of a "pulse". A pulse has a natural max amplitude, but another amplitude would have to be encoded onto a raising or falling edge, which would be difficult. The method of claim 26 can use

<div align="center">6</div>

Response to 09/21/2004 Office Action

multiple amplitude values because of the waveform that the digital data is encoded on (such as a sinusoidal waveform).

Similarly, when the digital data is subsequently decoded from a pulse in the 4B-1H PAM scheme, a max amplitude of the pulse is detected and decoded into digital data. In claim 26, both a max and min amplitude of the analog signal cycle are detected and decoded into digital data. Therefore, Doyle does not teach that which is claimed in claim 26.

The same arguments apply for Betts, Taubenheim, and any other cited references.

Based on the above remarks, the Applicants submit that new claims 26-41 are novel and non-obvious over the cited references and any combination thereof.

Conclusion

Based on the above remarks, the Applicants submit that claims 26-41 are allowable and respectfully request allowance of claims 26-41.

Any fees may be charged to deposit account 21-0765.

Respectfully submitted,

Date: _11-9-04_

SIGNATURE OF PRACTITIONER
Brett L. Bornsen, Reg. No. 46,566
Duft Setter Ollila & Bornsen LLC
Telephone: (303) 938-9999 ext. 17
Facsimile: (303) 938-9995

Correspondence address:

CUSTOMER NO. 28004

Attn: Harley R. Ball
6391 Sprint Parkway
Mailstop: KSOPHT0101-Z2100
Overland Park, KS 66251-2100

7

Response to 09/21/2004 Office Action